

Tool 1

Mathematics Content

Grades 6-8

CCSSM Curriculum Analysis Tool 1— Ratios and Proportional Relationships for Grades 6-8

Name of Reviewer _____ School/District _____ Date _____

Name of Curriculum Materials _____ Publication Date _____ Grade Level(s) _____

Content Coverage Rubric (Cont):

Not Found (N) -The mathematics content was not found.

Low (L) - Major gaps in the mathematics content were found.

Marginal (M) - Gaps in the content, as described in the Standards, were found and these gaps may not be easily filled.

Acceptable (A) - Few gaps in the content, as described in the Standards, were found and these gaps may be easily filled.

High (H) - The content was fully formed as described in the Standards.

Balance of Mathematical Understanding and Procedural Skills Rubric (Bal):

Not Found (N) -The content was not found.

Low (L) - The content was not developed or developed superficially.

Marginal (M) - The content was found and focused primarily on procedural skills and minimally on mathematical understanding, or ignored procedural skills.

Acceptable (A)-The content was developed with a balance of mathematical understanding and procedural skills consistent with the Standards, but the connections between the two were not developed.

High (H)-The content was developed with a balance of mathematical understanding and procedural skills consistent with the Standards, and the connections between the two were developed.

CCSSM Grade 6

CCSSM Grade 7

CCSSM Grade 8

| 6.RP Ratios and Proportional Relationships | Chap. Pages | Cont N-L-M-A-H | Bal N-L-M-A-H | 7.RP Ratios and Proportional Relationships | Chap. Pages | Cont N-L-M-A-H | Bal N-L-M-A-H | 8.EE Expressions and Equations | Chap. Pages | Cont N-L-M-A-H | Bal N-L-M-A-H |
|---|-------------|----------------|---------------|--|-------------|----------------|---------------|---|-------------|----------------|---------------|
| Understand ratio concepts and use ratio reasoning to solve problems. | | | | Analyze proportional relationships and use them to solve real-world and mathematical problems. | | | | Understand connections between proportional relationships, lines, and linear equations. | | | |
| 1. Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. For example, “The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak.” | | | | 1. Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. For example, if a person walks 1/2 mile in each 1/4 hour, compute the unit rate as the complex fraction 1/2/1/4 miles per hour, equivalently 2 miles per hour. | | | | 5. Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed. | | | |

CCSSM Curriculum Analysis Tool 1—Ratios and Proportional Relationships for Grades 6-8

| CCSSM Grade 6 | | | | CCSSM Grade 7 | | | | CCSSM Grade 8 | | | |
|--|--|--|--|--|--|--|--|---|--|--|--|
| Understand ratio concepts and use ratio reasoning to solve problems. | | | | Analyze proportional relationships and use them to solve real-world and mathematical problems. | | | | Understand connections between proportional relationships, lines, and linear equations. | | | |
| 2. Understand the concept of a unit rate a/b associated with a ratio $a:b$ with $b \neq 0$, and use rate language in the context of a ratio relationship. For example, “This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is $3/4$ cup of flour for each cup of sugar.” “We paid \$75 for 15 hamburgers, which is a rate of \$5 per hamburger.” | | | | 2. Recognize and represent proportional relationships between quantities. 2a. Decide whether two quantities are in a proportional relationship by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin. 2d. Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation. | | | | 6. Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation $y = mx$ for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at b . | | | |
| 3. Use ratio and rate reasoning to solve real-world and mathematical problems by reasoning. 3c. Find a percent of a quantity as a rate per 100; solve problems involving finding the whole, given a part and the percent. | | | | 2b. Identify the constant of proportionality in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. 2c. Represent proportional relationships by equations. | | | | | | | |
| 3a. Make tables of equivalent ratios relating quantities with whole number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios. | | | | 3. Use proportional relationships to solve multistep ratio and percent problems. <i>Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease.</i> | | | | | | | |
| 3b. Find a percent of a quantity as a rate per 100; solve problems involving finding the whole, given a part and the percent. | | | | | | | | | | | |
| 3d. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities. | | | | | | | | | | | |

CCSSM Curriculum Analysis Tool 1—Ratios and Proportional Relationships for Grades 6-8

Notes and Examples:

Overall Impressions:

1. What are your overall impressions of the curriculum materials examined?
2. What are the strengths and weaknesses of the materials you examined?

Standards Alignment:

3. Have you identified gaps within this domain? What are they? If so, can these gaps be realistically addressed through supplementation?
4. Within grade levels, do the curriculum materials provide sufficient experiences to support student learning within this standard?
5. Within this domain, is the treatment of the content across grade levels consistent with the progression within the Standards?

Balance between Mathematical Understanding and Procedural Skills

6. Do the curriculum materials support the development of students' mathematical understanding?
7. Do the curriculum materials support the development of students' proficiency with procedural skills?
8. Do the curriculum materials assist students in building connections between mathematical understanding and procedural skills?
9. To what extent do the curriculum materials provide a balanced focus on mathematical understanding and procedural skills?
10. Do student activities build on each other within and across grades in a logical way that supports mathematical understanding and procedural skills?

CCSSM Curriculum Analysis Tool 1—Geometry for Grades 6-8

Name of Reviewer _____ School/District _____ Date _____

Name of Curriculum Materials _____ Publication Date _____ Grade Level(s) _____

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|--|--|
| Content Coverage Rubric (Cont): Not Found (N) -The mathematics content was not found. Low (L) - Major gaps in the mathematics content were found. Marginal (M) - Gaps in the content, as described in the Standards, were found and these gaps may not be easily filled. Acceptable (A) - Few gaps in the content, as described in the Standards, were found and these gaps may be easily filled. High (H) - The content was fully formed as described in the Standards. | Balance of Mathematical Understanding and Procedural Skills Rubric (Bal): Not Found (N) -The content was not found. Low (L) - The content was not developed or developed superficially. Marginal (M)-The content was found and focused primarily on procedural skills and minimally on mathematical understanding, or ignored procedural skills. Acceptable (A)-The content was developed with a balance of mathematical understanding and procedural skills consistent with the Standards, but the connections between the two were not developed. High (H)-The content was developed with a balance of mathematical understanding and procedural skills consistent with the Standards, and the connections between the two were developed. |
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CCSSM Grade 6

CCSSM Grade 7

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| 6.G Geometry | Chap Pages | Cont N-L-M-A-H | Bal N-L-M-A-H | 7.G Geometry | Chap Pages | Cont N-L-M-A-H | Bal N-L-M-A-H | 8.G Geometry | Chap Pages | Cont N-L-M-A-H | Bal N-L-M-A-H |
|--|------------|----------------|---------------|--|------------|----------------|---------------|---|------------|----------------|---------------|
| Solve real-world and mathematical problems involving area, surface area, and volume. | | | | Solve real-life and mathematical problems involving angle measure, area, surface area, and volume. | | | | Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.* | | | |
| 1. Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems. | | | | 4. Know the formulas for area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle. | | | | | | | |
| 2. Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply formulas $V=lwh$ and $V=bh$ to find volumes to solve real-world and mathematical problems. | | | | 6. Solve real-world and mathematical problems involving area, volume, and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms. | | | | | | | |

| CCSSM Curriculum Analysis Tool 1—Geometry for Grades 6-8 | | | | | | | | | | | |
|---|------------|----------------|---------------|--|------------|----------------|---------------|--|------------|----------------|---------------|
| CCSSM Grade 6 | | | | CCSSM Grade 7 | | | | CCSSM Grade 8 | | | |
| 6.G Geometry | Chap Pages | Cont N-L-M-A-H | Bal N-L-M-A-H | 7.G Geometry | Chap Pages | Cont N-L-M-A-H | Bal N-L-M-A-H | 8.G Geometry | Chap Pages | Cont N-L-M-A-H | Bal N-L-M-A-H |
| Solve real-world/math problems involving area, surface area, and volume. | | | | Solve real-world/math problems involving angle measure, area, surface area, and volume. | | | | Solve real-world/ mathematical problems involving volume of cylinders, cones, and spheres. | | | |
| 4. Represent 3-dimensional figures using nets of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems. | | | | 3. Describe the two-dimensional figures that result from slicing three dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids. | | | | 9. Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems. | | | |
| | | | | Draw, construct, and describe geometrical figures and describe the relationships between them. | | | | Understand congruence and similarity using physical models, transparencies, or geometry software. | | | |
| 3. Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. | | | | 5. Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure. | | | | 5. Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles. | | | |
| | | | | | | | | 1. Verify the properties of rotations, reflections, and translations: a. lines are taken to lines and the line segments to line segments of the same length; b. angles are taken to angles; c. parallel lines are taken to parallel lines. | | | |
| | | | | | | | | 3. Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates. | | | |
| | | | | 1. Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale. | | | | 4. Understand that a 2-dimensional figure is similar to another if the second can be obtained from the first by rotations, reflections, translations, and dilations; given two similar figures, describe sequences that make them similar. | | | |

CCSSM Curriculum Analysis Tool 1—Geometry for Grades 6-8

| CCSSM Grade 6 | | | | CCSSM Grade 7 | | | | CCSSM Grade 8 | | | |
|---------------|------------|----------------|---------------|--|------------|----------------|---------------|---|------------|----------------|---------------|
| 6.G Geometry | Chap Pages | Cont N-L-M-A-H | Bal N-L-M-A-H | 7.G Geometry | Chap Pages | Cont N-L-M-A-H | Bal N-L-M-A-H | 8.G Geometry | Chap Pages | Cont N-L-M-A-H | Bal N-L-M-A-H |
| | | | | Draw, construct, and describe geometrical figures and describe the relationships between them. | | | | Understand congruence and similarity using physical models, transparencies, or geometry software. | | | |
| | | | | 2. Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle. | | | | 2. Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits congruence between them. | | | |
| | | | | | | | | Understand and apply the Pythagorean Theorem | | | |
| | | | | | | | | 6. Explain a proof of the Pythagorean Theorem and its converse. | | | |
| | | | | | | | | 7. Apply the Pythagorean Theorem to determine the unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions. | | | |
| | | | | | | | | 8. Apply the Pythagorean Theorem to find the distance between two points in a coordinate system. | | | |

Notes/Examples:

CCSSM Curriculum Analysis Tool 1—Geometry for Grades 6-8

Overall Impressions:

11. What are your overall impressions of the curriculum materials examined?
12. What are the strengths and weaknesses of the materials you examined?

Standards Alignment:

13. Have you identified gaps within this domain? What are they? If so, can these gaps be realistically addressed through supplementation?
14. Within grade levels, do the curriculum materials provide sufficient experiences to support student learning within this standard?
15. Within this domain, is the treatment of the content across grade levels consistent with the progression within the Standards?

Balance between Mathematical Understanding and Procedural Skills:

16. Do the curriculum materials support the development of students' mathematical understanding?
17. Do the curriculum materials support the development of students' proficiency with procedural skills?
18. Do the curriculum materials assist students in building connections between mathematical understanding and procedural skills?
19. To what extent do the curriculum materials provide a balanced focus on mathematical understanding and procedural skills?
20. Do student activities build on each other within and across grades in a logical way that supports mathematical understanding and procedural skills?

CCSSM Curriculum Analysis Tool 1—Expressions and Equations for Grades 6-8

Name of Reviewer _____ School/District _____ Date _____

Name of Curriculum Materials _____ Publication Date _____ Grade Level(s) _____

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CCSSM Grade 6

CCSSM Grade 7

CCSSM Grade 8

| 6.EE Expressions and Equations | Chap Pages | Cont N-L-M-A-H | Bal N-L-M-A-H | 7.EE Expressions and Equations | Chap Pages | Cont N-L-M-A-H | Bal N-L-M-A-H | 8.EE Expressions and Equations | Chap Pages | Cont N-L-M-A-H | Bal N-L-M-A-H |
|--|------------|----------------|---------------|--|------------|----------------|---------------|---|------------|----------------|---------------|
| Apply and extend previous understandings of arithmetic to algebraic expressions | | | | Use properties of operations to generate equivalent expressions | | | | Work with radicals and integer exponents | | | |
| 1. Write and evaluate numerical expressions involving whole number exponents. | | | | | | | | 1. Know and apply the properties of integer exponents to generate equivalent numerical expressions. | | | |
| | | | | | | | | 4. Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities. Interpret scientific notation that has been generated by technology. | | | |

CCSSM Curriculum Analysis Tool 1—Expressions and Equations for Grades 6-8

| CCSSM Grade 6 | | | | CCSSM Grade 7 | | | | CCSSM Grade 8 | | | |
|---|---------------|-----------------------|----------------------|--|---------------|-----------------------|----------------------|---|---------------|-----------------------|----------------------|
| 6.EE Expressions and Equations | Chap Pages | Cont N-L-M- A-H | Bal N-L-M- A-H | 7.EE Expressions and Equations | Chap Pages | Cont N-L-M- A-H | Bal N-L-M- A-H | 8.EE Expressions and Equations | Chap Pages | Cont N-L-M- A-H | Bal N-L-M- A-H |
| Apply and extend previous understandings of arithmetic to algebraic expressions | | | | Use properties of operations to generate equivalent expressions | | | | Work with radicals and integer exponents | | | |
| 2. Write, read, and evaluate expressions in which letters stand for numbers. a. Write expressions that record operations with numbers and with letters standing for numbers. b. Identify parts of an expression using mathematical terms (sum, term, product, quotient, coefficient); view one or more parts of an expression as a single entity. | | | | | | | | | | | |
| c. Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations that include whole-number exponents, in the order when there are no parentheses to specify order. | | | | 1. Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients. | | | | | | | |
| 3. Apply the properties of operations to generate equivalent expressions. <i>For example, apply the distributive property or properties of operations.</i> | | | | 2. Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities are related. | | | | | | | |
| 4. Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). | | | | | | | | | | | |
| 6. Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or any number in a specified set. | | | | | | | | | | | |

CCSSM Curriculum Analysis Tool 1—Expressions and Equations for Grades 6-8

| CCSSM Grade 6 | | | | CCSSM Grade 7 | | | | CCSSM Grade 8 | | | |
|---|------------|----------------|---------------|--|------------|----------------|---------------|---|------------|----------------|---------------|
| 6.EE Expressions and Equations | Chap Pages | Cont N-L-M-A-H | Bal N-L-M-A-H | 7.EE Expressions and Equations | Chap Pages | Cont N-L-M-A-H | Bal N-L-M-A-H | 8.EE Expressions and Equations | Chap Pages | Cont N-L-M-A-H | Bal N-L-M-A-H |
| Reason about and solve one-variable equations and inequalities | | | | Solve real life and mathematical problems using numerical and algebraic expressions and equations | | | | Analyze and solve linear equations and pairs of simultaneous linear equations | | | |
| 5. Understand solving an equation or inequality as a process of answering a question: Which values form a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true. | | | | | | | | 7. Solve linear equations in one variable. a. Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form $x = a$, $a = a$, or $a = b$ results (where a and b are different numbers). b. Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms. | | | |
| 7. Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p , q and x are all nonnegative rational numbers. | | | | 4. Use variables to represent quantities in a real-world and mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. a. Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p , q , r are specific rational numbers. Solve equations like these fluently. | | | | | | | |
| 8. Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of inequalities on number lines. | | | | b. Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p , q , and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. | | | | | | | |

CCSSM Curriculum Analysis Tool 1—Expressions and Equations for Grades 6-8

| CCSSM Grade 6 | | | | CCSSM Grade 7 | | | | CCSSM Grade 8 | | | |
|--------------------------------|------------|----------------|---------------|--------------------------------|------------|----------------|---------------|--|------------|----------------|---------------|
| 6.EE Expressions and Equations | Chap Pages | Cont N-L-M-A-H | Bal N-L-M-A-H | 7.EE Expressions and Equations | Chap Pages | Cont N-L-M-A-H | Bal N-L-M-A-H | 8.EE Expressions and Equations | Chap Pages | Cont N-L-M-A-H | Bal N-L-M-A-H |
| | | | | | | | | 8. Analyze and solve pairs of linear equations. a. Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations. b. Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. c. Solve real-world and math problems leading to two linear equations in two variables. | | | |

Notes/Examples:

Overall Impressions:

1. What are your overall impressions of the curriculum materials examined?
2. What are the strengths and weaknesses of the materials you examined?

Standards Alignment:

3. Have you identified gaps within this domain? What are they? If so, can these gaps be realistically addressed through supplementation?
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9. To what extent do the curriculum materials provide a balanced focus on mathematical understanding and procedural skills?
10. Do student activities build on each other within and across grades in a logical way that supports mathematical understanding and procedural skills?

CCSSO Curriculum Analysis Tool 1—Statistics and Probability for Grades 6-8

Name of Reviewer _____ School/District _____ Date _____

Name of Curriculum Materials _____ Publication Date _____ Grade Level(s) _____

Content Coverage Rubric (Cont):

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Balance of Mathematical Understanding and Procedural Skills Rubric(Bal):

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Marginal (M) - The content was found and focused primarily on procedural skills and minimally on mathematical understanding, or ignored procedural skills.

Acceptable (A)-The content was developed with a balance of mathematical understanding and procedural skills consistent with the Standards, but the connections between the two were not developed.

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| CCSSM Grade 6 | | | | CCSSM Grade 7 | | | | CCSSM Grade 8 | | | |
|--|------------|----------------|---------------|---|------------|----------------|---------------|--|------------|----------------|---------------|
| 6.SP Statistics and Probability | Chap Pages | Cont N-L-M-A-H | Bal N-L-M-A-H | 7.SP Statistics and Probability | Chap Pages | Cont N-L-M-A-H | Bal N-L-M-A-H | 8.SP Statistics and Probability | Chap Pages | Cont N-L-M-A-H | Bal N-L-M-A-H |
| Develop understanding of statistical variability. | | | | Use random sampling to draw inferences about a population. | | | | Investigate patterns of association in bivariate data. | | | |
| 1. Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. <i>For example, “How old am I?” is not a statistical question, but “How old are the students in my school?” is a statistical question because one anticipates variability in students’ ages.</i> | | | | 1. Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Know that random sampling produces samples and supports valid inferences. | | | | 1. Construct and interpret scatterplots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association. | | | |
| | | | | 2. Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. | | | | 2. Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line. | | | |

CCSSM Curriculum Analysis Tool 1—Statistics and Probability for Grades 6-8

| CCSSM Grade 6 | | | | CCSSM Grade 7 | | | | CCSSM Grade 8 | | | |
|--|------------|----------------|---------------|--|------------|-------------------|---------------|---|------------|----------------|---------------|
| 6.SP Statistics and Probability | Chap Pages | Cont N-L-M-A-H | Bal N-L-M-A-H | 7.SP Statistics and Probability | Chap Pages | Content N-L-M-A-H | Bal N-L-M-A-H | 8.SP Statistics and Probability | Chap Pages | Cont N-L-M-A-H | Bal N-L-M-A-H |
| Develop understanding of statistical variability | | | | Draw informal comparative inferences about two populations | | | | | | | |
| 2. Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape. | | | | 3. Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability. <i>For example, the mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team, about twice the variability (mean absolute deviation) on either team; on a dot plot, the separation between the two distributions of heights is noticeable</i> | | | | | | | |
| 3. Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number. | | | | 4. Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. <i>For example, decide whether the words in a chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth-grade science book.</i> | | | | 4. Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables | | | |
| Notes/Examples | | | | | | | | | | | |

| CCSSM Curriculum Analysis Tool 1—Statistics and Probability for Grades 6-8 | | | | | | | | | | | |
|---|------------|----------------|---------------|---|------------|-------------------|---------------|---------------------------------|-----------|----------------|---------------|
| CCSSM Grade 6 | | | | CCSSM Grade 7 | | | | CCSSM Grade 8 | | | |
| 6.SP Statistics and Probability | Chap Pages | Cont N-L-M-A-H | Bal N-L-M-A-H | 7.SP Statistics and Probability | Chap Pages | Content N-L-M-A-H | Bal N-L-M-A-H | 8.SP Statistics and Probability | Chap Page | Cont N-L-M-A-H | Bal N-L-M-A-H |
| Summarize and describe distributions. | | | | | | | | | | | |
| 4. Display numerical data in plots on a number line, including dot plots, histograms, and box plots. | | | | | | | | | | | |
| 5. Summarize numerical data sets in relation to their context, such as by: a. Reporting the number of observations; b. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement; c. giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered; and d. relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered. | | | | | | | | | | | |
| | | | | Investigate chance processes and develop, use, and evaluate probability models | | | | | | | |
| | | | | 5. Understand that the probability of a chance event is a between 0 and 1 and expresses the likelihood of the event. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is not unlikely or likely, and a probability near 1 indicates a likely event. | | | | | | | |

| CCSSM Curriculum Analysis Tool 1—Statistics and Probability for Grades 6-8 | | | | | | | | | | | |
|--|------------|----------------|---------------|--|------------|----------------|---------------|---------------------------------|-----------|----------------|---------------|
| CCSSM Grade 6 | | | | CCSSM Grade 7 | | | | CCSSM Grade 8 | | | |
| 6.SP Statistics and Probability | Chap Pages | Cont N-L-M-A-H | Bal N-L-M-A-H | 7.SP Statistics and Probability | Chap Pages | Cont N-L-M-A-H | Bal N-L-M-A-H | 8.SP Statistics and Probability | Chap Page | Cont N-L-M-A-H | Bal N-L-M-A-H |
| | | | | Investigate chance processes and develop, use, and evaluate probability models | | | | | | | |
| | | | | 6. Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability. | | | | | | | |
| | | | | 7. Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy. | | | | | | | |
| | | | | 7a. Develop a probability model by assigning equal probability to all outcomes, and use the model to find probabilities of events. | | | | | | | |
| | | | | 7b. Develop a probability model by observing frequencies in data generated from a chance process (which may not be uniform) by observing frequencies in data generated from a chance process. 7c. Design and use a stimulation to generate frequencies for compound events. | | | | | | | |
| | | | | 8. Find probabilities of compound events using lists, tables, tree diagrams, and simulation. a. Understand that the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs. 8c. Design and use a simulation to generate frequencies for compound events. | | | | | | | |

CCSSM Curriculum Analysis Tool 1—Statistics and Probability for Grades 6-8

Notes/Examples

Overall Impressions:

1. What are your overall impressions of the curriculum materials examined?
2. What are the strengths and weaknesses of the materials you examined?

Standards Alignment:

3. Have you identified gaps within this domain? What are they? If so, can these gaps be realistically addressed through supplementation?
4. Within grade levels, do the curriculum materials provide sufficient experiences to support student learning within this standard?
5. Within this domain, is the treatment of the content across grade levels consistent with the progression within the Standards?

Balance between Mathematical Understanding and Procedural Skills

6. Do the curriculum materials support the development of students' mathematical understanding?
7. Do the curriculum materials support the development of students' proficiency with procedural skills?
8. Do the curriculum materials assist students in building connections between mathematical understanding and procedural skills?
9. To what extent do the curriculum materials provide a balanced focus on mathematical understanding and procedural skills?
10. Do student activities build on each other within and across grades in a logical way that supports mathematical understanding and procedural skills?